R9792U-40 TEST DATASHEET
(S/N MHP0125, 0128,0129,0131)

Caution !

- ✧ **This product requires maximum High Voltage of –8500V. Therefore, the closest attention should be paid to avoid any electric shock that might cause death or serious injury.**
- ✧ **To prevent the accumulation of electric charge inside the tube, be sure to form a closed circuit at the base side before applying high voltage.**
- ✧ **To prevent surface leakage caused by high voltage, do not use the tube in high humidity.（Recommended for use in a nitrogen-enriched atmosphere.）**
- ✧ **Do not disassemble the tube.**

Mar./22/2006
Hamamatsu Photonics K.K.
Electron Tube Division

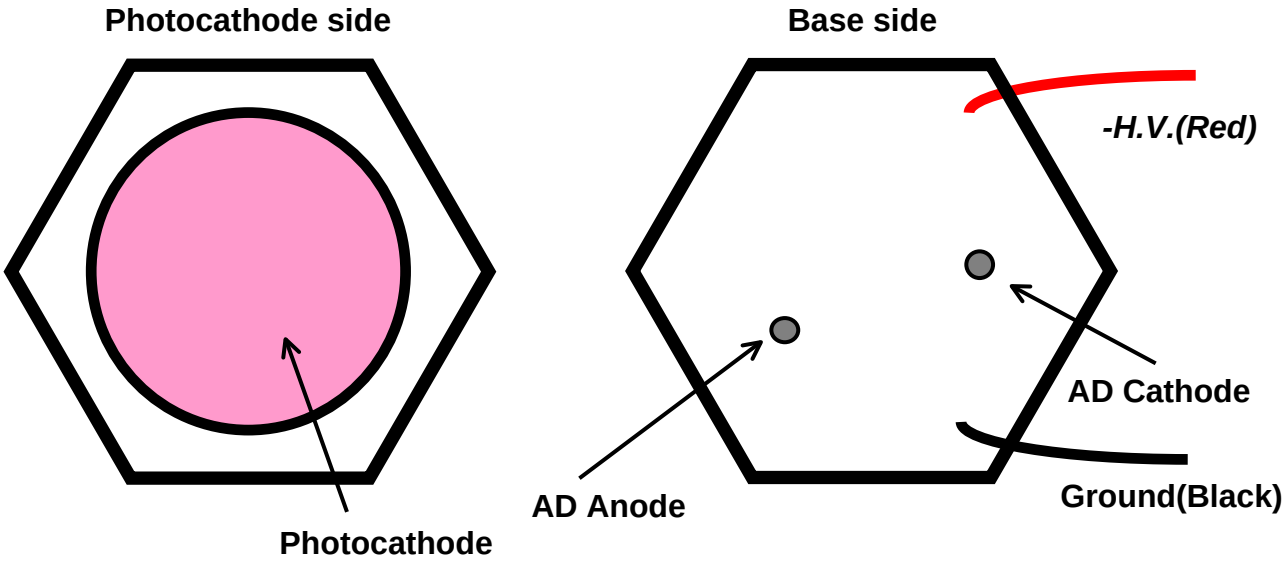
R9792U-40 TEST DATASHEET
(S/N MHP0114, 0118,0119,0121)

Caution !

- ✧ **This product requires maximum High Voltage of –8500V. Therefore, the closest attention should be paid to avoid any electric shock that might cause death or serious injury.**
- ✧ **To prevent the accumulation of electric charge inside the tube, be sure to form a closed circuit at the base side before applying high voltage.**
- ✧ **To prevent surface leakage caused by high voltage, do not use the tube in high humidity.（Recommended for use in a nitrogen-enriched atmosphere.）**
- ✧ **Do not disassemble the tube.**

Mar./22/2006
Hamamatsu Photonics K.K.
Electron Tube Division

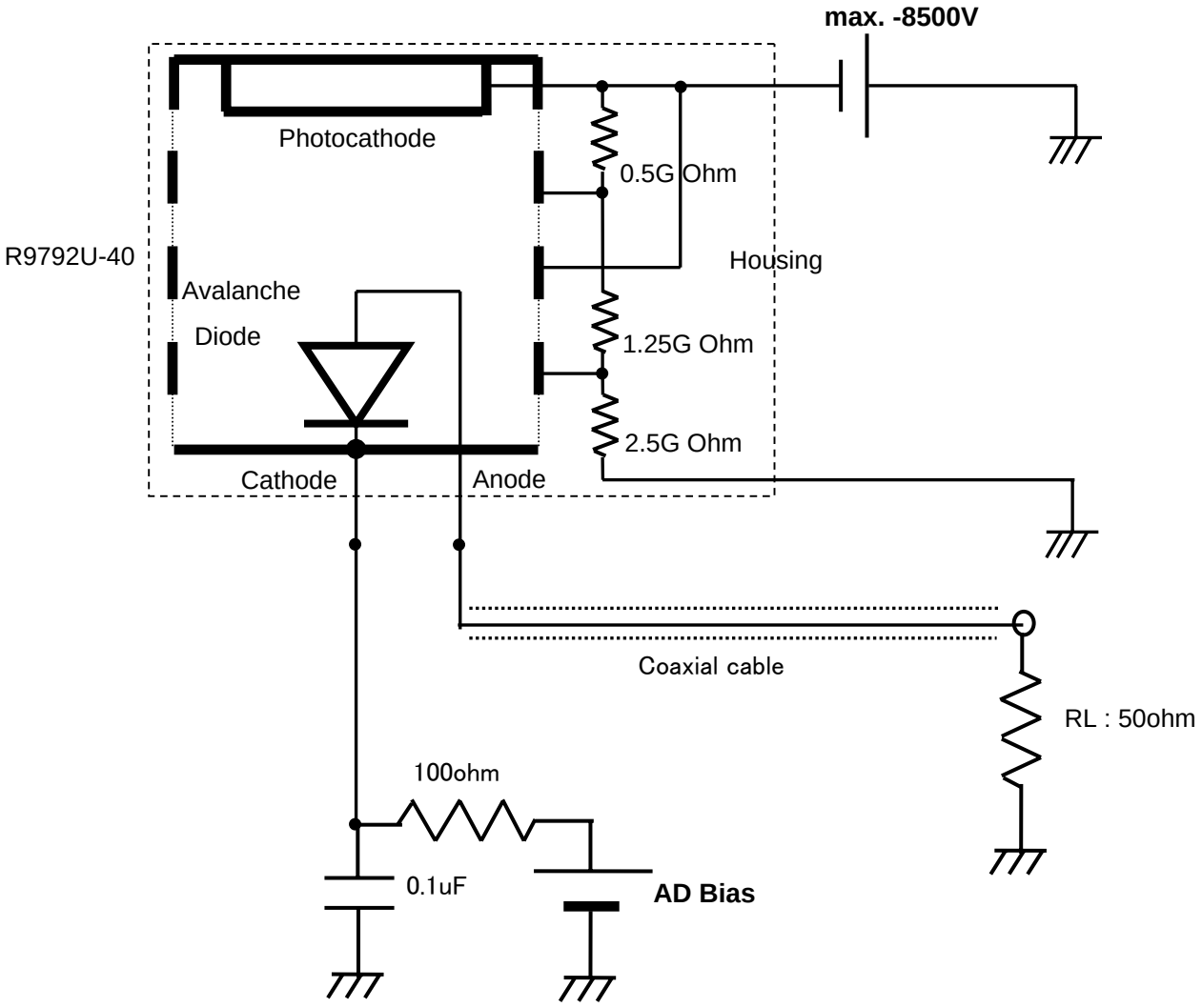
Tube View



（Effective Area:　φ18 mm）

Circuit Example

High Speed Light Detection Mode

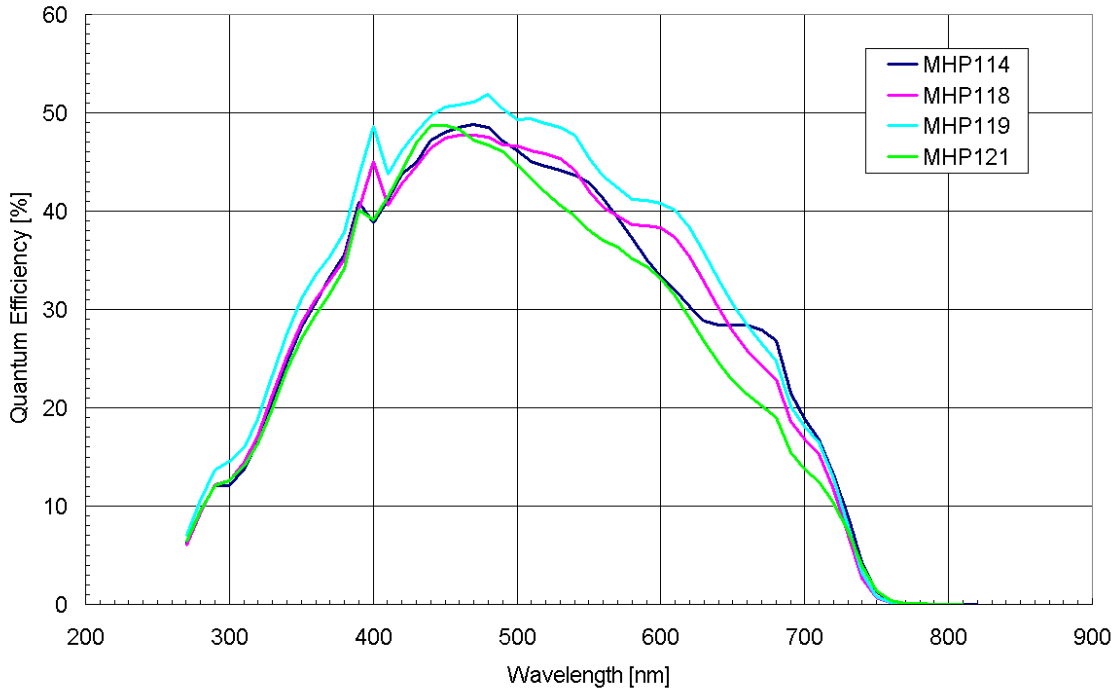


＊　　) To prevent leakage, be sure all electric parts are clean before high voltage is applied.

Characteristics

	MHP0114	MHP0118	MHP0119	MHP0121
Photocathode Quantum Efficiency at peak	49%	48%	52%	49%
Max. AD Reverse Bias Voltage	418V	424V	415V	409V
Max. AD Gain	85	109	104	103
AD Reverse Voltage at AD Gain 30	376V	376V	370V	364V
AD Leakage Current at AD Gain 30	1.8nA	2.0nA	2.0nA	2.0nA
Max. Photocathode Voltagae	-8.5kV	-8.5kV	-8.5kV	-8.5kV
Bombardment Gain at Photocathode Voltage -8kV	1570	1540	1530	1540
Max. Gain	146543	183420	174184	173821

Photocathode(GaAsP) Spectral Response



MHP0114

Quantum Efficiency [%]

Wavelength [nm]

	0	10	20	30	40	50	60	70	80	90
200								6.3	9.4	12.0
300	12.1	13.7	16.6	20.5	24.6	28.2	30.8	33.2	35.6	40.8
400	38.8	41.1	43.8	44.9	47.3	48.0	48.6	48.8	48.5	47.2
500	46.2	45.1	44.6	44.2	43.7	42.8	41.3	39.3	37.2	35.1
600	33.4	32.0	30.3	28.8	28.5	28.4	28.4	27.9	26.9	21.5
700	18.9	16.8	13.1	8.9	4.3	1.2	0.3	0.1	0.0	0.0
800	0.0	0.0	0.0							

MHP0118

Quantum Efficiency [%]

Wavelength [nm]

	0	10	20	30	40	50	60	70	80	90
200								6.1	9.3	12.2
300	12.6	14.4	17.1	21.3	25.3	28.6	31.1	33.0	35.1	40.2
400	45.0	40.6	42.7	44.5	46.4	47.4	47.7	47.7	47.5	46.7
500	46.6	46.1	45.9	45.3	44.2	42.0	40.4	39.5	38.6	38.5
600	38.4	37.3	35.4	32.8	30.1	27.8	25.9	24.3	22.9	18.6
700	16.8	15.2	11.7	7.0	2.7	0.7	0.2	0.1	0.1	0.0

MHP0119

Quantum Efficiency [%]

Wavelength [nm]

	0	10	20	30	40	50	60	70	80	90
200								7.0	10.6	13.7
300	14.5	16.0	18.9	23.3	27.5	31.1	33.6	35.4	37.8	43.5
400	48.6	43.8	46.1	48.0	49.7	50.6	50.8	51.1	51.9	50.4
500	49.4	49.4	48.9	48.5	47.7	45.3	43.6	42.3	41.2	41.1
600	40.8	40.1	38.3	35.8	32.9	30.6	28.4	26.5	24.8	20.1
700	18.1	16.4	12.8	7.9	3.2	0.8	0.2	0.1	0.0	0.0
800	0.0	0.0								

MHP0121

Quantum Efficiency [%]

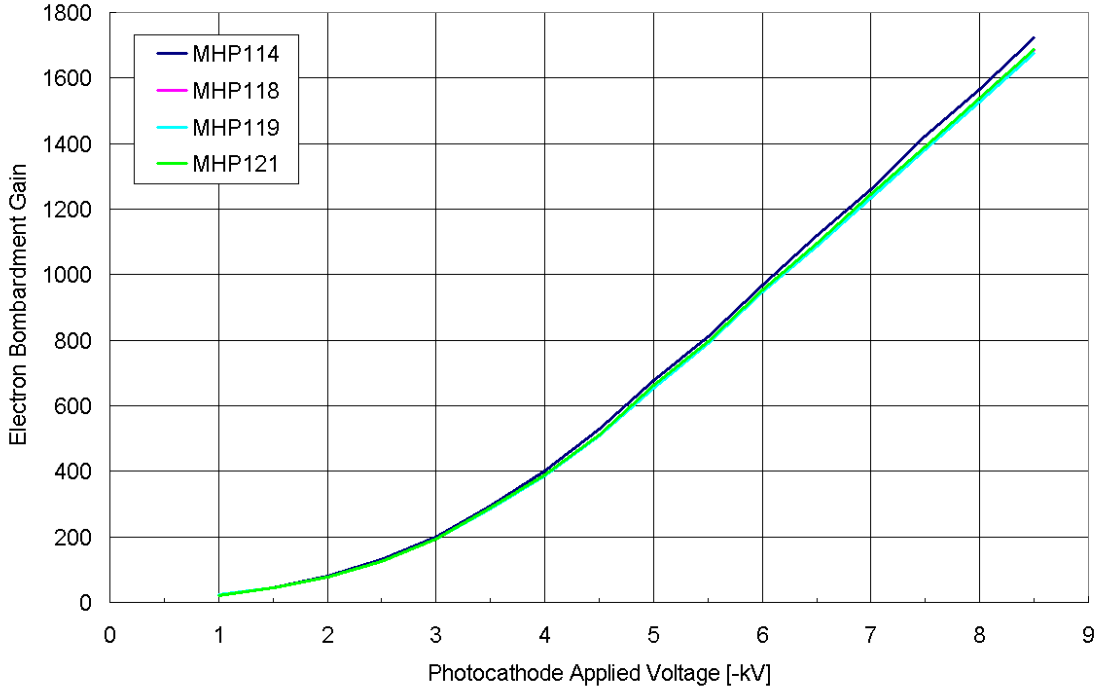
Wavelength [nm]

	0	10	20	30	40	50	60	70	80	90
200								6.4	9.5	12.1
300	12.6	14.0	16.3	19.9	23.8	27.1	29.5	31.6	34.1	40.1
400	39.1	41.5	44.0	46.9	48.7	48.7	48.3	47.2	46.8	46.0
500	44.7	43.3	41.9	40.6	39.5	38.0	37.0	36.3	35.2	34.4
600	33.2	31.4	29.1	26.7	24.5	22.8	21.4	20.2	19.0	15.4
700	13.8	12.5	10.3	7.4	4.0	1.4	0.4	0.1	0.1	0.0
800	0.0	0.0								

Gain Characteristics

1）Tube Gain:　Bombardment Gain as a Function of Photocathode Applied Voltage.

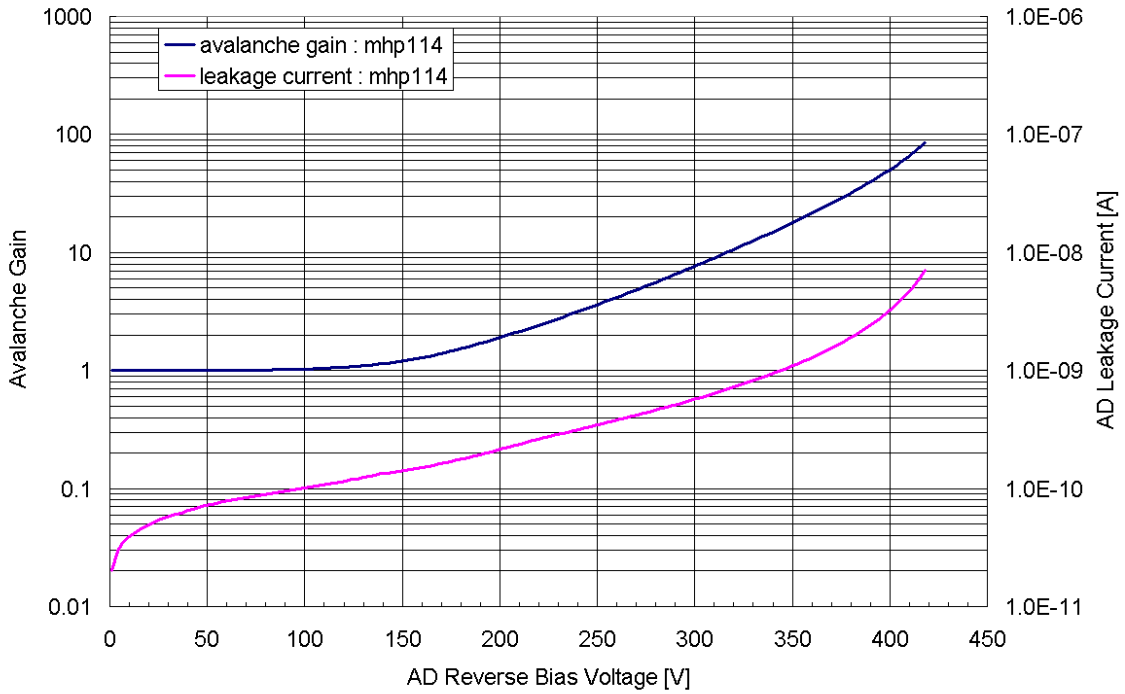
(AD reverse voltage is fixed at 30V; avalanche gain of 1)



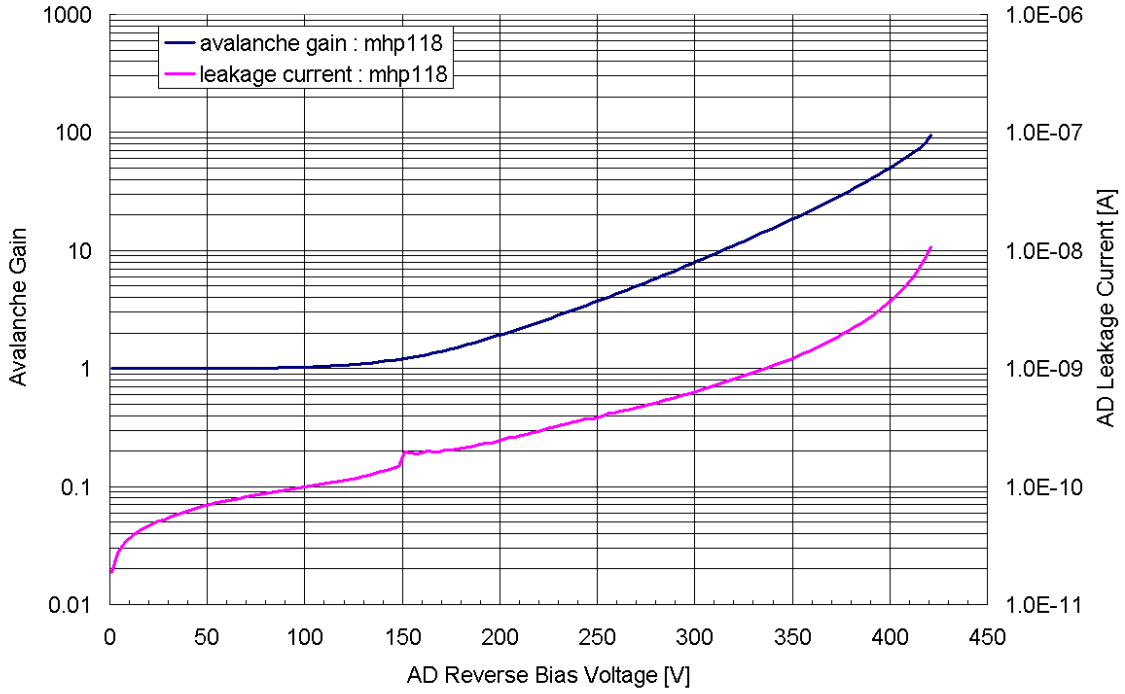
2) AD Avalanche Gain as a Function of Reverse Voltage

(Photocathode voltage is fixed at –8kV)

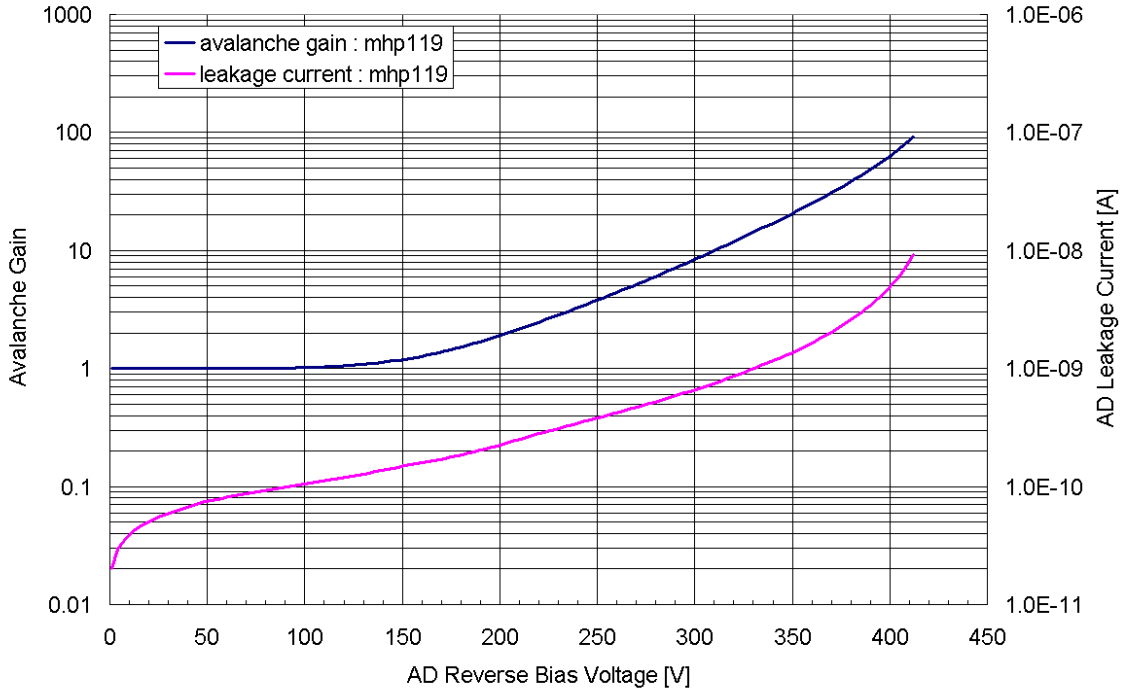
MHP0114



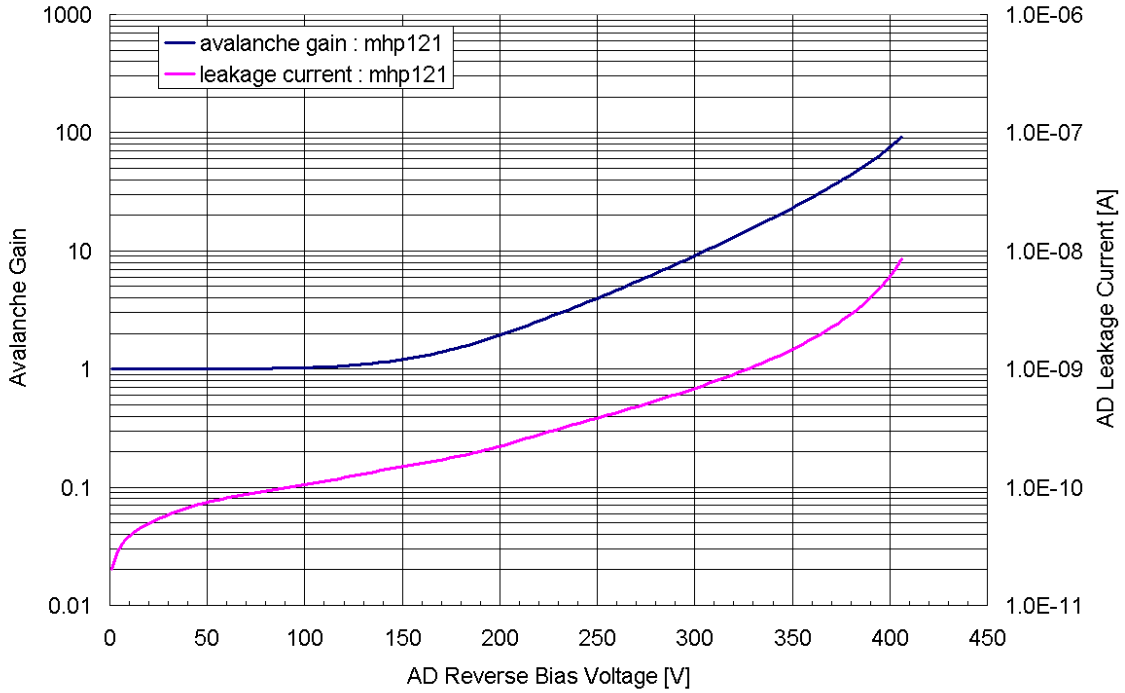
MHP0118



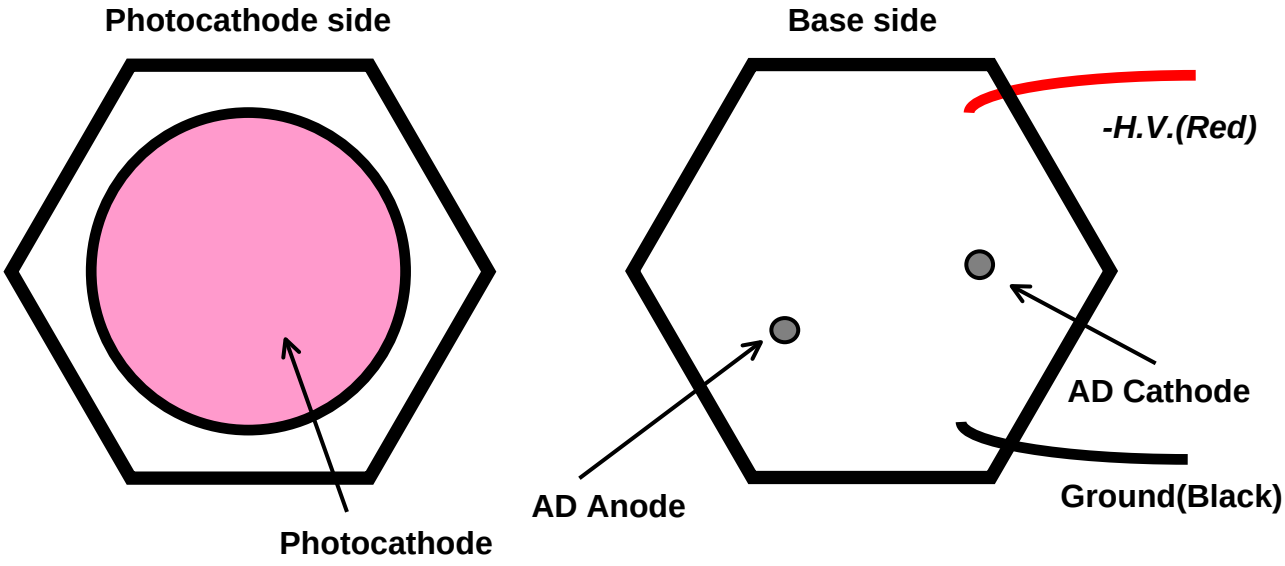
MHP0119



MHP0121



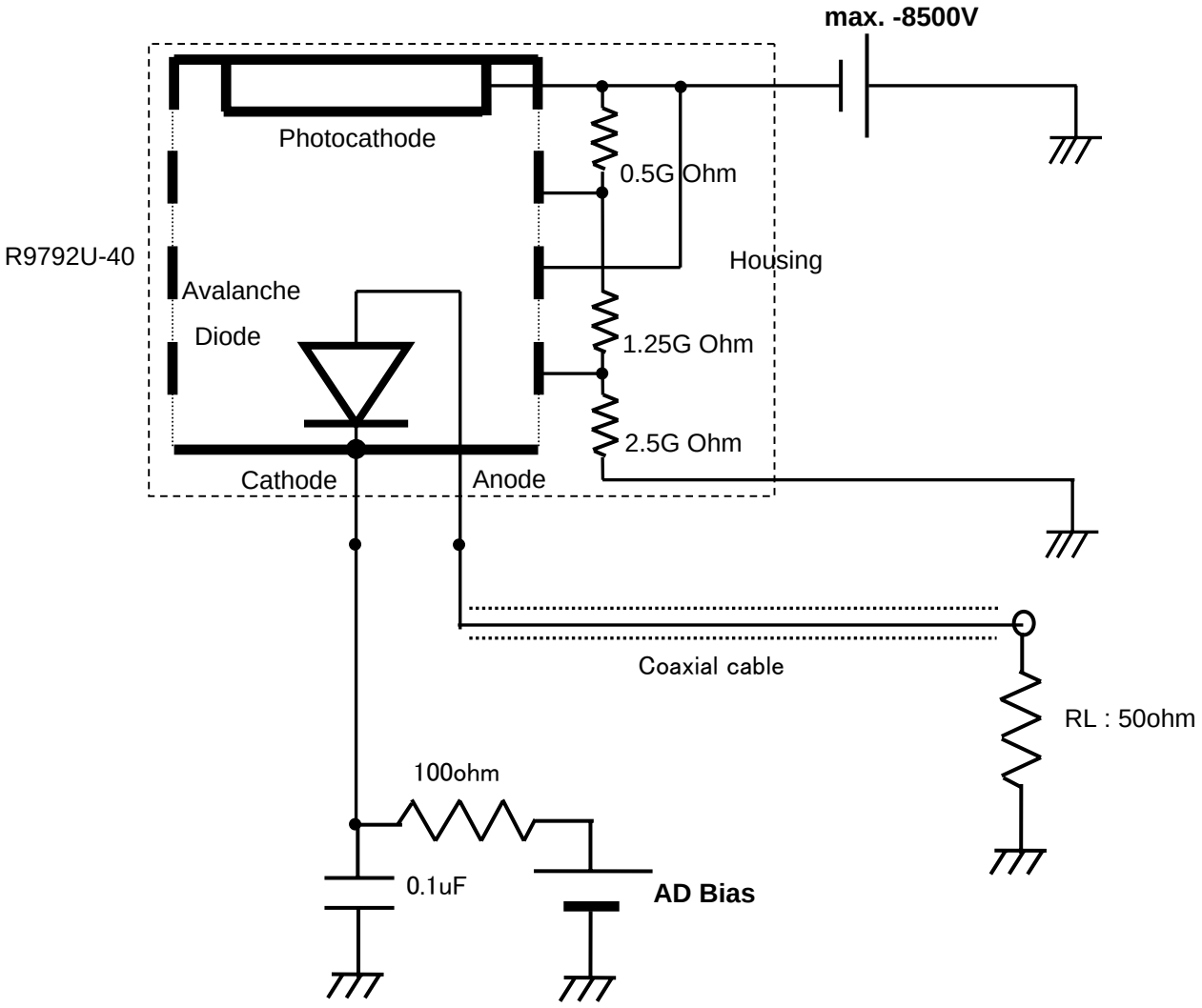
Tube View



（Effective Area:　φ18 mm）

Circuit Example

High Speed Light Detection Mode

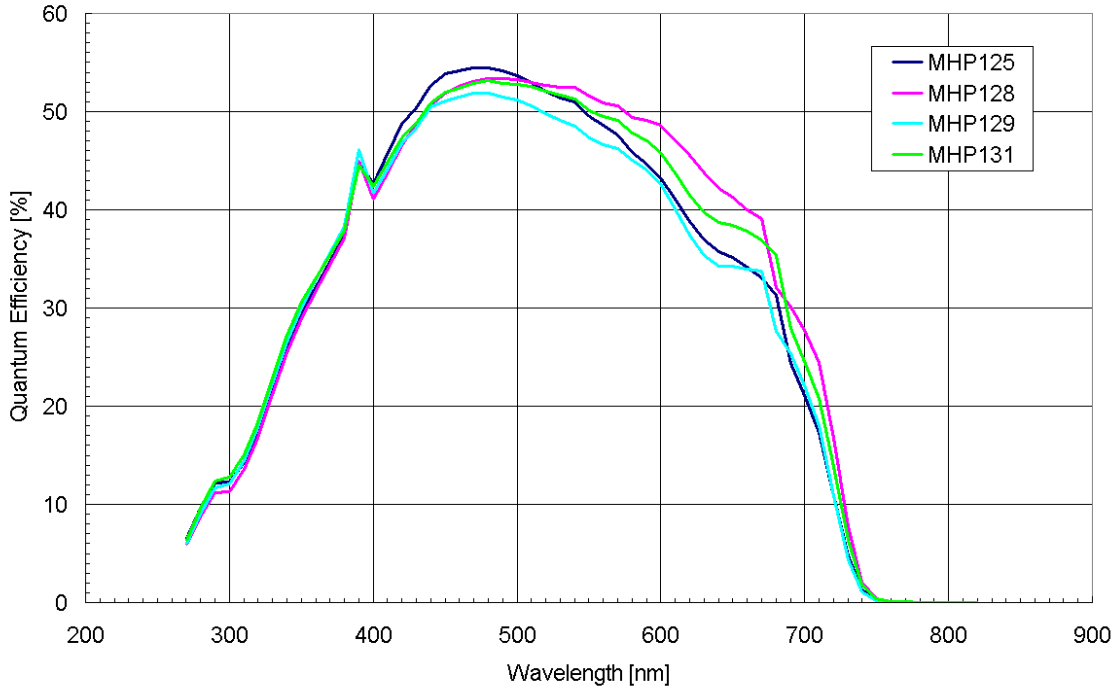


＊　　) To prevent leakage, be sure all electric parts are clean before high voltage is applied.

Characteristics

	MHP0125	MHP0128	MHP0129	MHP0131
Photocathode Quantum Efficiency at peak	54%	53%	52%	53%
Max. AD Reverse Bias Voltage	424V	418V	430V	430V
Max. AD Gain	116	115	116	78
AD Reverse Voltage at AD Gain 30	376V	367V	382V	391V
AD Leakage Current at AD Gain 30	2.0nA	2.0nA	2.3nA	3.9nA
Max. Photocathode Voltagae	-8.5kV	-8.5kV	-8.5kV	-8.5kV
Bombardment Gain at Photocathode Voltage -8kV	1540	1560	1540	1540
Max. Gain	195540	195997	195695	131239

Photocathode(GaAsP) Spectral Response



MHP0125

Quantum Efficiency [%]

Wavelength [nm]

	0	10	20	30	40	50	60	70	80	90
200								6.5	9.6	12.1
300	12.3	14.3	17.3	21.9	26.2	29.6	32.2	34.6	37.4	44.8
400	42.7	45.8	48.7	50.4	52.7	53.9	54.1	54.5	54.5	54.2
500	53.7	52.9	52.0	51.4	51.0	49.5	48.6	47.6	45.9	44.7
600	43.3	41.1	38.8	36.9	35.8	35.1	34.2	33.1	31.3	24.4
700	21.1	17.3	10.9	4.7	1.3	0.3	0.1	0.1	0.0	0.0
800	0.0									

MHP0128

Quantum Efficiency [%]

Wavelength [nm]

	0	10	20	30	40	50	60	70	80	90
200								5.9	8.7	11.2
300	11.3	13.5	16.7	21.2	25.4	28.9	31.8	34.3	37.2	45.0
400	41.1	43.8	46.5	48.8	50.7	51.9	52.5	53.0	53.3	53.4
500	53.2	53.0	52.7	52.5	52.5	51.6	50.9	50.6	49.4	49.1
600	48.6	47.1	45.5	43.8	42.2	41.3	40.0	39.1	32.1	30.1
700	27.7	24.4	16.7	7.7	2.1	0.4	0.1	0.1	0.0	0.0
800	0.0	0.0								

MHP0129

Quantum Efficiency [%]

Wavelength [nm]

	0	10	20	30	40	50	60	70	80	90
200								6.1	9.1	11.7
300	12.1	14.5	17.8	22.3	26.5	30.0	33.0	35.5	38.3	46.2
400	41.7	44.3	46.7	48.3	50.5	51.1	51.5	51.9	51.9	51.5
500	51.2	50.6	49.8	49.1	48.5	47.3	46.7	46.3	45.0	44.1
600	42.7	40.1	37.4	35.4	34.2	34.3	33.9	33.8	27.6	25.3
700	22.1	18.0	10.9	4.4	1.1	0.2	0.1	0.1	0.0	0.0
800	0.0									

MHP0131

Quantum Efficiency [%]

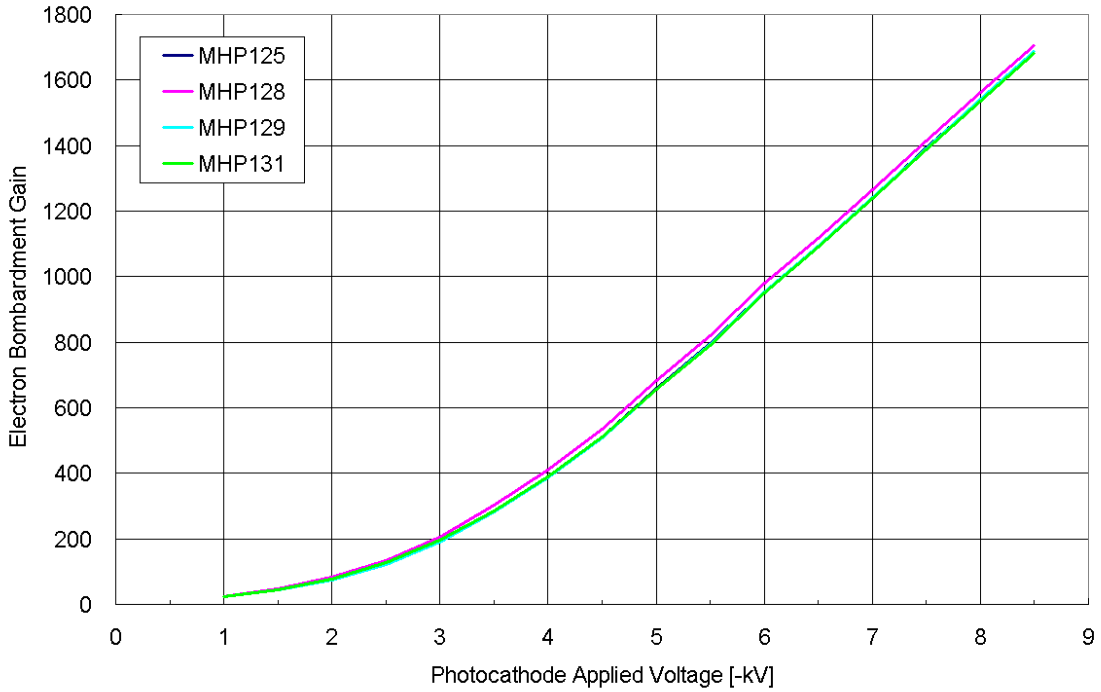
Wavelength [nm]

	0	10	20	30	40	50	60	70	80	90
200								6.4	9.6	12.4
300	12.7	15.0	18.3	22.9	27.2	30.6	33.1	35.4	38.0	44.6
400	42.4	44.9	47.3	48.8	50.9	52.0	52.4	52.9	53.2	52.9
500	52.7	52.6	52.1	51.7	51.3	50.1	49.5	49.1	47.8	47.0
600	45.8	43.8	41.4	39.7	38.7	38.4	37.8	37.0	35.3	28.0
700	24.5	20.8	13.9	6.4	1.8	0.4	0.1	0.1	0.0	0.0
800	0.0	0.0								

Gain Characteristics

1）Tube Gain:　Bombardment Gain as a Function of Photocathode Applied Voltage.

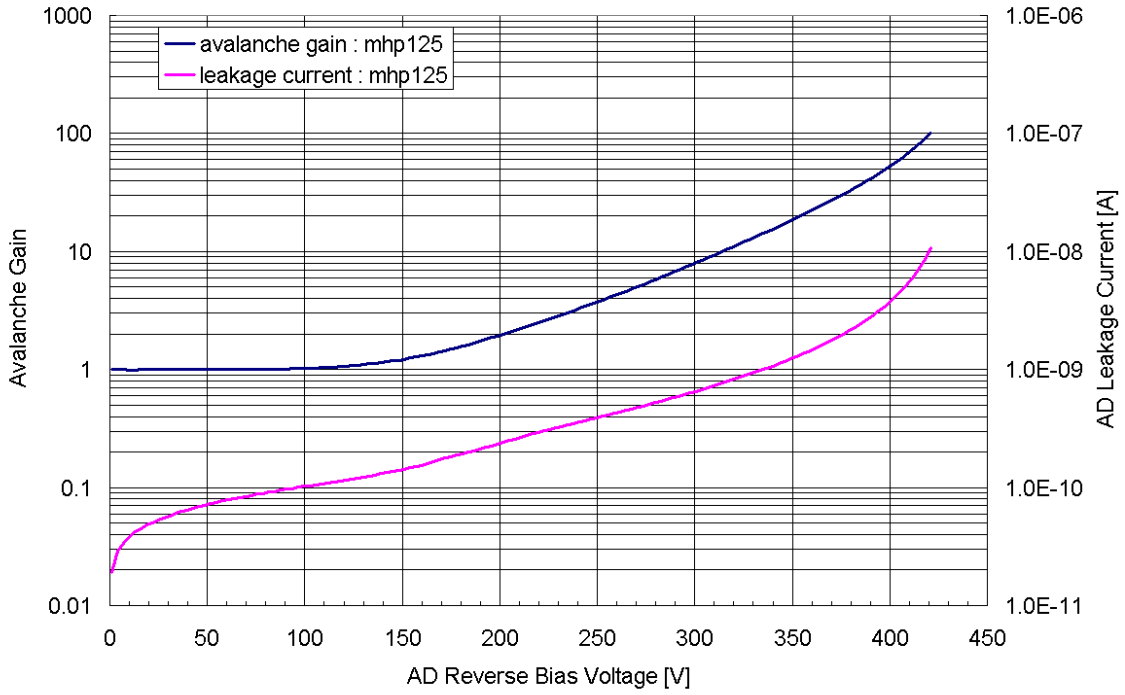
(AD reverse voltage is fixed at 30V; avalanche gain of 1)



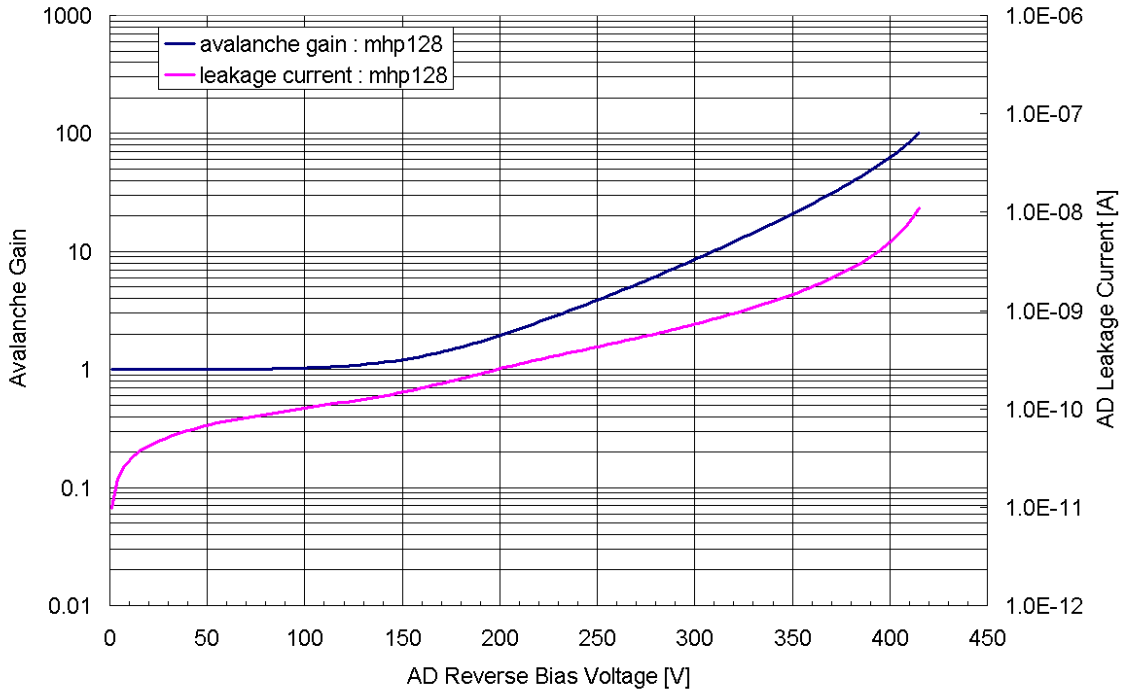
2) AD Avalanche Gain as a Function of Reverse Voltage

(Photocathode voltage is fixed at –8kV)

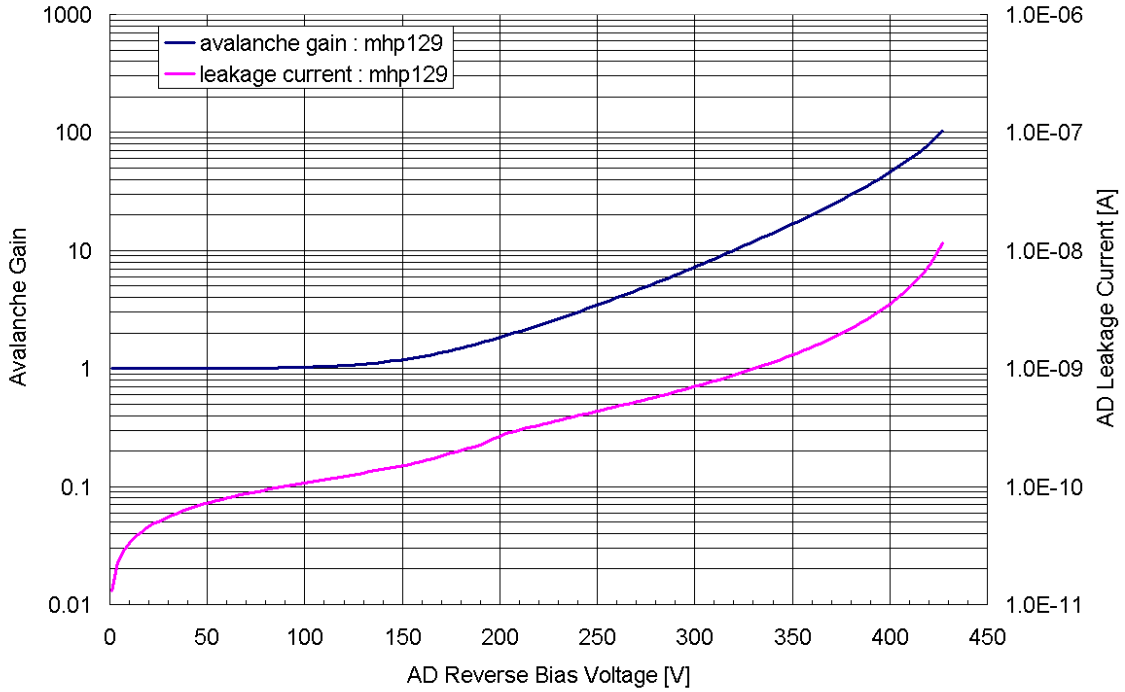
MHP0125



MHP0128



MHP0129



MHP0131